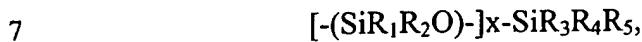


WE CLAIM:

1 1. A vulcanizable rubber composition comprising a reinforcing white
2 filler, which can be used for the manufacture of a tire, wherein the rubber composition
3 comprises a diene block copolymer which is intended to interact with said reinforcing
4 white filler, said diene block copolymer comprising on at least one end thereof a
5 polysiloxane block which ends in a trialkylsilyl group, said polysiloxane block
6 corresponding to the formula:



8 in which R_1 , R_2 , R_3 , R_4 and R_5 each represent alkyl groups having
9 from 1 to 20 carbon atoms, and in which x is a natural integer other than zero.

1 2. A rubber composition according to Claim 1, wherein said diene block
2 copolymer comprises styrene-butadiene units.

1 3. A rubber composition according to Claim 1, wherein said polysiloxane
2 block comprises a polydimethylsiloxane.

1 4. A rubber composition according to Claim 1, wherein said trialkylsilyl
2 group comprises a butyl group.

1 5. A rubber composition according to Claim 1, wherein said polysiloxane
2 block has a molecular weight of between 500 and 5,000 g/mol.

1 6. A rubber composition according to Claim 1, wherein said reinforcing
2 white filler comprises greater than 50% of the mass fraction of reinforcing filler in the
3 rubber composition.

1 7. A rubber composition according to Claim 6, wherein said reinforcing
2 white filler further comprises carbon black in an amount of less than or equal to 30% of
3 the mass fraction of said reinforcing filler.

1 8. A rubber composition according to Claim 1, wherein said reinforcing
2 white filler comprises silica.

1 9. A rubber composition according to Claim 1, wherein the composition
2 comprises a blend of natural rubber and said diene block copolymer, wherein the natural
3 rubber comprises from 1 to 70 parts by weight per 100 parts by weight of said diene
4 block copolymer.

1 10. A rubber composition according to Claim 1, wherein the composition
2 comprises a blend of a synthetic elastomer and/or a starred diene elastomer and diene
3 block copolymer, wherein said synthetic elastomer and/or starred diene elastomer
4 comprises from 1 to 70 parts by weight per 100 parts by weight of said diene block
5 copolymer.

1 11. A process for the preparation of a rubber composition comprising a
2 reinforcing white filler, wherein the rubber composition comprises a diene block
3 copolymer which is intended to interact with said reinforcing white filler, said diene
4 block copolymer comprising on at least one end thereof a polysiloxane block which ends
5 in a trialkylsilyl group, said polysiloxane block corresponding to the formula:

6 $[-(SiR_1R_2O)-]^x SiR_3R_4R_5$,

7 in which R_1 , R_2 , R_3 , R_4 and R_5 represent alkyl groups having from 1 to
8 20 carbon atoms, and in which x is a natural integer other than zero,

9 wherein the process comprises
10 (a) reacting a living diene polymer with a functionalized polysiloxane
11 comprising at one of its chain ends a halo-organosilane function and, at its other chain
12 end, a trialkylsilyl group, to produce said diene block copolymer comprising said
13 polysiloxane block which ends in a trialkylsilyl group, and
14 (b) mixing, by thermomechanical working, said diene block copolymer
15 with silica, and with conventional additives for obtaining a vulcanizable rubber
16 composition.

1 14. A process according to Claim 11 or 12, wherein the diene polymer
2 comprises a copolymer obtained by copolymerization of one or more dienes which are
3 conjugated together, or with one or more vinyl aromatic compounds having 8 to 20
4 carbon atoms, said copolymer containing 20% to 99% by weight of diene units, and 1 to
5 80% by weight of vinyl aromatic units.

1 15. A process according to Claim 12, wherein said initiator comprises an
2 alkylolithium or a lithium amide.

1 16. A process according to Claim 11 or 12, further comprising preparing
2 said polysiloxane by polymerizing a cyclic siloxane initiated by an organolithium
3 compound to form a polysiloxane, and functionalizing said polysiloxane with a
4 dihalo-organosilane.

1 17. A preparation process according to Claim 16, wherein the cyclic
2 siloxane is hexamethylcyclotrisiloxane, the initiator is n-butyllithium and the
3 functionalizing agent is dichlorodimethylsilane.

1 18. A tire, characterized in that it comprises a tread containing a rubber
2 composition according to one of Claims 1 to 10.